APPLICANT AMENDS HER APPLICATION AS FOLLOWS:

<u>IN THE CLAIMS:</u>

1. (Initial Amendment) A <u>computer-implemented</u> method for constructing <u>and tangibly expressing</u> a conic peak-point curve [~~with a computer~~] comprising [~~the steps of~~]:

    <u>(i)</u> ~~(vi)~~ selecting a start point, a_0 <u>on a computer image display of an implementing computer with a computer input device of the implementing computer;</u>

    <u>(ii)</u> ~~(vii)~~ selecting an end point, a_1 <u>on the computer image display system with the computer input device;</u>

    <u>(iii)</u> ~~(viii)~~ selecting a start tangent direction, e_0 <u>on the computer image display system with the computer input device;</u>

    <u>(iv)</u> ~~(ix)~~ selecting an end tangent direction, e_1 <u>on the computer image display system with the computer input device;</u> [~~and~~]

    <u>(v)</u> ~~(x)~~ selecting a distance of a peak point, p from the chord between the start and end points<u>, a_0, a_1, on the computer image display system with the computer input device</u> where the peak point is a point on the curve that is farthest away from the chord <u>between the start and end points a_0, a_1,</u> lying on a centerline segment connecting the center of the chord with a intersection point [~~t~~] <u>r</u> of rays extending in the start and end tangent directions e_0, e_1 respectively from the start and end points a_0, a_1, <u>whereupon the implementing computer, using any suitable mathematical formulae, constructs a conic peak-point curve passing through the start point a_0, the peak point p, and the end point a_1 with the start tangent direction e_0 and the end tangent direction e_1; and</u>

    <u>(vi)</u> <u>expressing tangibly the conic peak-point curve using any image display system controlled by the implementing computer.</u>

2. (Initial Amendment) A <u>computer-implemented</u> method for constructing <u>and tangibly expressing</u> a conic point-point curve [~~with a computer~~] comprising [~~the steps of~~]:

(i) (v) selecting a start point, a_0 <u>on a computer image display system of an implementing computer with a computer input device of the implementing computer</u>;

(ii) (vi) selecting a start tangent direction, e_0 <u>on the computer image display system with the computer input device</u>; [~~and~~]

(iii) (vii) selecting a peak point, p, <u>whereupon the computer image display system, responsive to the implementing</u> computer, [~~system~~] displays a guide area for locating possible end points loci defined by two rays intersecting at a point s that lies on one of [~~the~~] two rays that extends from the start point a_0 in the direction of the peak point p at twice (2X) the distance of the peak point p from the start point a_0, the remaining ray extending from s in a direction opposite to the start tangent direction e_0[,] <u>;</u>

(iv) (viii) selecting <u>with the computer input device</u> any point in the guide <u>area displayed on the computer image display system</u> as an end point a_1 [~~of the~~] <u>for a conic point-point</u> curve, whereupon the <u>implementing</u> computer, using any suitable mathematical formulae [~~then~~] constructs a <u>conic point-point</u> curve passing through the start point, a_0, peak point, p, and the end point a_1 <u>with the start tangent direction e_0</u>, where [~~the~~] <u>an</u> end tangent direction e_1 is derived from a point of intersection of [~~start and end tangents~~] <u>rays extending in the start and end tangent directions e_0, e_1</u>, [~~that~~] <u>which</u> coincides with the intersection of <u>a ray extending in the</u> start tangent <u>direction,</u> e_0 and a centerline extending through the center of a chord between the start and end points a_0, a_1, and through the peak point, p<u>; and</u>

(v) <u>expressing tangibly the constructed conic point-point curve using any image display system controlled by the implementing computer.</u>

3. (Initial Amendment) A <u>computer-implemented</u> method for constructing <u>and</u> <u>tangibly</u> <u>expressing</u> [of] a conic point-tangent curve [~~with a computer~~] comprising [~~the steps of~~]:

    <u>(i)</u> (~~vi~~) selecting a start point, a_0 <u>on</u> <u>a</u> <u>computer</u> <u>image</u> <u>display</u> <u>system</u> <u>of</u> <u>an</u> <u>implementing</u> <u>computer</u> <u>with</u> <u>a</u> <u>computer</u> <u>input</u> <u>device</u> <u>of</u> <u>the</u> <u>implementing</u> <u>computer;</u>

    <u>(ii)</u> (~~vii~~) selecting a start tangent direction, e_0 <u>on</u> <u>the</u> <u>computer</u> <u>image</u> <u>display</u> <u>system</u> <u>with</u> <u>the</u> <u>computer</u> <u>input</u> <u>device;</u>

    <u>(iii)</u> (~~viii~~) selecting an end point, a_1 <u>on</u> <u>the</u> <u>computer</u> <u>image</u> <u>display</u> <u>system</u> <u>with</u> <u>the</u> <u>computer</u> <u>input</u> <u>device;</u>

    <u>(iv)</u> (~~ix~~) selecting an end tangent direction, e_1 <u>on</u> <u>the</u> <u>computer</u> <u>image</u> <u>display</u> <u>system</u> <u>with</u> <u>the</u> <u>computer</u> <u>input</u> <u>device;</u> [~~and~~]

    <u>(v)</u> (~~x~~) selecting a [~~fixed~~] weight, w for the curve <u>with</u> <u>a</u> <u>computer</u> <u>input</u> <u>device</u> <u>of</u> <u>the</u> <u>implementing</u> <u>computer,</u> whereupon the <u>implementing</u> computer, using any suitable mathematical formulae, [~~then~~] constructs a <u>conic</u> <u>point-tangent</u> curve passing through the start point, a_0, and the end point a_1 <u>with</u> <u>the</u> <u>start</u> <u>tangent</u> <u>direction</u> <u>e_0</u> <u>and</u> <u>the</u> <u>end</u> <u>tangent</u> <u>direction</u> <u>e_1,</u> <u>where</u> <u>a</u> <u>peak</u> <u>point</u> <u>p</u> <u>is</u> <u>calculated</u> <u>by</u> <u>the</u> <u>weight,</u> [~~where the input weight~~] w, <u>which</u> is a parameter [~~defined as~~] defining a proportion between a distance, $\underline{D_q}$ of [~~a~~] <u>the</u> peak point p from a center point, q of a chord between the start and end points a_0, a_1 and a distance, $\underline{D_r}$ of the peak point p from an intersection point, [~~t~~] <u>r</u> of <u>rays</u> <u>extending</u> <u>in</u> the start and end tangent[~~s~~] <u>directions</u> <u>e_0,</u> <u>e_1</u> <u>respectively</u> <u>from</u> <u>the</u> <u>start</u> <u>and</u> <u>end</u> <u>point</u> <u>a_0,a_1;</u> <u>and</u>

    <u>(vi)</u> <u>expressing</u> <u>tangibly</u> <u>the</u> <u>constructed</u> <u>conic</u> <u>point-tangent</u> <u>curve</u> <u>using</u> <u>any</u> <u>image</u> <u>display</u> <u>system</u> <u>controlled</u> <u>by</u> <u>the</u> <u>implementing</u> <u>computer.</u>

4. (Initial Amendment) The method of claim 3 wherein the selected [fixed] weight $\underline{w}$ is <u>calculated from</u>

a fixed [cos weight v, an] arbitrarily defined positive <u>number $\underline{v}$,</u> [parameter that utilizes a

multiplication factor such as a trigonometric cosine relationship for computing a weight that limits a

permitted range of peak points of the possible curves] <u>multiplied by $\cos(\alpha/2)$, where $\underline{\alpha}$ is an angle</u>

<u>between the start and end tangent directions $\underline{e_0}$, $\underline{e_1}$ extending from a common point, and the</u>

<u>constructed curve converges to limit as $\underline{\alpha}$ approaches 180°.</u>

5. (Initial Amendment) A <u>computer-implemented</u> method for constructing <u>and tangibly</u> expressing a conic point curve [~~with a computer~~] comprising [~~the steps of~~]:

(i) (v) selecting a start point, a$_0$ <u>on a computer image display system of an implementing computer with a computer input device of the implementing computer;</u>

(ii) (vi) selecting a start tangent direction, e$_0$ <u>on the computer image display system with the computer input device;</u> [~~and~~]

(iii) (vii) selecting an end point, a$_1$ <u>on the computer image display system with the computer input device;</u> [~~, and~~]

(iv) (viii) selecting a [~~fixed~~] weight, w, <u>with a computer input device of the implementing computer</u> [~~for the curve~~], whereupon the implementing computer, using any suitable mathematical formulae, [~~then~~] constructs a conic point curve passing through the start point a$_0$ and the end point a$_1$ <u>with the start</u> tangent direction e$_0$, where an end tangent direction e$_1$ is [~~automatically~~] set by pre-defined [~~program~~] parameters <u>selected with a computer input device, where a peak point p is calculated by the weight w, which is a parameter defining a proportion between a distance D$_q$ of the peak point p from a center point q of a chord between the start and end points a$_0$, a$_1$, and a distance D$_r$ of the peak point p from an intersection point r of rays extending in the start and end tangent directions e$_0$, e$_1$ respectively from the start and end point a$_0$, a$_1$;</u> and

(v) <u>expressing tangibly the constructed conic point curve using any image display system controlled by the implementing computer.</u>

6. (Initial Amendment) The method of claim 5 wherein the selected [fixed] weight $\underline{w}$ is <u>calculated</u> <u>from</u> a fixed [cos weight v, an] arbitrarily defined positive <u>number</u> <u>v,</u> [parameter that utilizes a multiplication factor such as a trigonometric cosine relationship for computing a weight that limits a permitted range of peak points of the possible curves] <u>multiplied</u> <u>by</u> <u>$\cos(\alpha/2)$,</u> <u>where</u> <u>α</u> <u>is</u> <u>an</u> <u>angle</u> <u>between</u> <u>the</u> <u>start</u> <u>and</u> <u>end</u> <u>tangent</u> <u>directions</u> <u>e_0,</u> <u>e_1</u> <u>extending</u> <u>from</u> <u>a</u> <u>common</u> <u>point,</u> <u>and</u> <u>the</u> <u>constructed</u> <u>curve</u> <u>converges</u> <u>to</u> <u>limit</u> <u>as</u> <u>α</u> <u>approaches</u> <u>$180°$.</u>

7. (Initial Amendment) A <u>computer-implemented</u> method for constructing <u>and tangibly</u> expressing a conic curvature curve [~~with a computer~~] comprising [~~the steps of~~]:

(i) ~~(vii)~~ selecting a start point, a_0 <u>on a computer image display system of an implementing computer</u> <u>with a computer input device of the implementing computer;</u>

(ii) ~~(viii)~~ selecting a start tangent direction, e_0 <u>on the computer image display system with the computer</u> <u>input device</u>, [~~;~~] whereupon <u>the</u> <u>implementing</u> computer displays a guideline perpendicular to the start tangent direction, e_0 <u>on the computer image display system</u> for [~~the~~] <u>a</u> center m_0 of [~~the~~] <u>a</u> start curvature circle, r_0;

(iii) ~~(ix)~~ selecting a center m_0 of the start curvature circle, r_0 on the displayed guideline; and

(iv) ~~(x)~~ selecting an end point a_1 <u>on the computer image display system with the computer input</u> <u>device</u>; and

(v) ~~(xi)~~ selecting an end tangent direction, e_1[~~:~~] <u>on the computer image display system with the</u> <u>computer input device</u>, <u>whereupon</u> the <u>implementing</u> computer, using any suitable mathematical formulae, [~~draws~~] <u>constructs</u> a conic <u>curvature</u> curve through the [~~start and end~~ ~~points a_0, a_1~~] <u>start point a_0 and the end point a_1</u>, [~~with respective start and end tangent~~ ~~directions of e0, e1~~] <u>with the start tangent direction e_0 and the end tangent direction e_1</u>, with the center m_0 of the start curvature circle r_0, and [~~the~~] <u>a</u> center m_1 for [~~the~~] <u>an</u> end curvature circle r_1 [~~which are automatically determined~~] <u>is calculated; and</u>

(vi) <u>expressing tangibly the constructed conic curvature curve using any image display system</u> <u>controlled by the implementing computer.</u>

8. (Initial Amendment) A <u>computer-implemented</u> method for constructing <u>and tangibly</u> <u>expressing</u> a class of point curvature curves including cubic Bezier curves and conics [~~with a computer~~] comprising [~~the steps of~~]:

(i) ~~(iv)~~ selecting a start point, a_0 <u>on a computer image display system of an implementing computer</u> <u>with a computer input device of the implementing computer</u>;

(ii) ~~(v)~~ selecting a start tangent direction, e_0 <u>on the computer image display system with the computer</u> <u>input device,</u>[~~;~~] whereupon the <u>implementing</u> computer displays a guideline perpendicular to the start tangent direction, e_0 for [~~the~~] <u>a</u> center m_0 of [~~the~~] <u>a</u> start curvature circle r_0 <u>on the</u> <u>computer image display system</u>;

(iii) ~~(vi)~~ selecting a center m_0 of [~~the~~] <u>a</u> start curvature circle r_0 on the displayed guideline <u>on the</u> <u>computer image display system with the computer input device,</u>; and

(iv) ~~(xii)~~ selecting an end point a_1 <u>on the computer image display system with the computer input</u> <u>device, whereupon the implementing</u> computer, using any suitable mathematical formulae, [~~then~~] constructs a <u>point curvature</u> curve passing through the [~~start and end points a_0, a_1~~] <u>the</u> <u>start point a_0 and the end point a_1</u>, with <u>the</u> start tangent direction e_0 and <u>the</u> center m_0 of the start curvature circle r_0, where an end tangent direction e_1 is [~~automatically~~] set by [~~selected~~] pre-defined [program] parameters <u>selected with a computer input device; and</u>

(v) <u>expressing tangibly the constructed point curvature curve using any image display system</u> <u>controlled by the implementing computer.</u>

9. (Initial Amendment) The method of claim 8 wherein the constructed curve is a conic and a center m_1 of an end curvature circle r_1 [are] is thereby automatically determined.

10. (Initial Amendment) The method of claim 8 wherein the constructed curve is a cubic Bezier curve, and a center m_1 of the end curvature circle r_1 is set by a [selected] defined [program] parameter selected using a computer input device.

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11. (Initial Amendment) A <u>computer-implemented</u> method for constructing <u>and tangibly</u> expressing a Bezier point-tangent curve [~~with a computer~~] comprising [~~the steps of~~]:

(i) selecting a start point, a_0 <u>on a computer image display system of an implementing computer with a computer input device of the implementing computer</u>;

(ii) selecting a start tangent direction, e_0 <u>on the computer image display system with the computer input device</u>;

(iii) selecting an end point, a_1 <u>on the computer image display system with the computer input device</u>;

(iv) selecting an end tangent direction, e_1 <u>on the computer image display system with the computer input device</u>; [~~and~~]

(v) selecting a [~~fixed~~] weight, w <u>with an input device of the implementing computer</u> [~~for the curve~~], whereupon <u>the</u> <u>implementing</u> computer, using any suitable mathematical formulae, [~~then~~] constructs <u>a Bezier point-tangent</u> curve passing through the start point, a_0, and the end point a_1 <u>with the start tangent direction e_0 and the end tangent direction e_1,</u> [~~and~~] <u>having</u> a peak point p calculated to lie on a centerline segment connecting a center point q of the chord between the start and end points a_0, a_1 with an intersection point, [~~t~~] <u>r</u> of <u>rays</u> <u>extending</u> <u>in</u> the start and end tangent[~~s~~] <u>directions e_0, e_1 from the start and end point a_0, a_1 respectively,</u> ~~where the input weight w is a parameter defined as~~] <u>the weight, w specifying</u> a proportion between a distance, <u>D_q</u> of a peak point p from the center point q of a chord and a distance, <u>D_r</u> of the peak point p from the intersection point, [~~t~~] <u>r</u> of the start and end tangents;

(vi) <u>expressing tangibly the constructed Bezier point-tangent curve using any image display system controlled by the implementing computer.</u>

12. (Initial Amendment) The method of claim 11 wherein the selected [~~fixed~~] weight $\underline{w}$ is $\underline{\text{calculated}}$ $\underline{\text{from}}$ a fixed [~~cos-weight v~~, an] arbitrarily defined positive $\underline{\text{number}}$ $\underline{v}$, [~~parameter that utilizes a~~ ~~multiplication factor such as a trigonometric cosine relationship for computing a weight that limits a~~ ~~permitted range of peak points of the possible curves~~] $\underline{\text{multiplied}}$ $\underline{\text{by}}$ $\underline{\cos(\alpha/2)}$, $\underline{\text{where}}$ $\underline{\alpha}$ $\underline{\text{is}}$ $\underline{\text{an}}$ $\underline{\text{angle}}$ $\underline{\text{between}}$ $\underline{\text{the}}$ $\underline{\text{start}}$ $\underline{\text{and}}$ $\underline{\text{end}}$ $\underline{\text{tangent}}$ $\underline{\text{directions}}$ $\underline{e_0}$, $\underline{e_1}$ $\underline{\text{extending}}$ $\underline{\text{from}}$ $\underline{a}$ $\underline{\text{common}}$ $\underline{\text{point}}$, $\underline{\text{and}}$ $\underline{\text{the}}$ $\underline{\text{constructed}}$ $\underline{\text{curve}}$ $\underline{\text{converges}}$ $\underline{\text{to}}$ $\underline{\text{limit}}$ $\underline{\text{as}}$ $\underline{\alpha}$ $\underline{\text{approaches}}$ $\underline{180°}$.

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13. (Initial Amendment) A computer-implemented method for constructing and tangibly expressing a Bezier point curve [with a computer] comprising [the steps of]:

(i) (ix) selecting a start point, a_0 on a computer image display system of an implementing computer with a computer input device of the implementing computer;

(ii) (x) selecting a start tangent direction, e_0 on the computer image display system with the computer input device;

(iii) (xi) selecting an end point, a_1 on the computer image display system with the computer input device;

(iv) (xii) selecting a fixed weight, w, [for the curve] with an input device of the implementing computer, whereupon the implementing computer, using any suitable mathematical formulae, [then] constructs a Bezier point curve passing through the start point a_0 with the start tangent direction e_0, and the end point a_1, where an end tangent direction e_1 is [automatically] set by [selected] pre-defined [program] parameters selected with an input device of the implementing computer, having a peak point p calculated to lie on a centerline segment connecting a center point q of the chord between the start and end points a_0, a_1 with an intersection point, [t] r of rays extending in the start and end tangent directions e_0, e_1 from the start and end point a_0, a_1 respectively, the weight, w specifying a proportion between a distance, D_q of a peak point p from the center point q of a chord and a distance, D_r of the peak point p from the intersection point, [t] r of the start and end tangents; and

(v) expressing tangibly the constructed Bezier point curve using any image display system controlled by the implementing computer.

14. (Initial Amendment) The method of claim 13 wherein the selected [~~fixed~~] weight $\underline{w}$ is <u>calculated</u> <u>from</u> a fixed [~~cos weight v~~, an] arbitrarily defined positive <u>number</u> $\underline{v}$, [~~parameter that utilizes a~~ ~~multiplication factor such as a trigonometric cosine relationship for computing a weight that limits a~~ ~~permitted range of peak points of the possible curves~~] <u>multiplied</u> <u>by</u> $\underline{\cos(\alpha/2)}$, <u>where</u> $\underline{\alpha}$ <u>is</u> <u>an</u> <u>angle</u> <u>between</u> <u>the</u> <u>start</u> <u>and</u> <u>end</u> <u>tangent</u> <u>directions</u> $\underline{e_0}$, $\underline{e_1}$ <u>extending</u> <u>from</u> <u>a</u> <u>common</u> <u>point,</u> <u>and</u> <u>the</u> <u>constructed</u> <u>curve</u> <u>converges</u> <u>to</u> <u>limit</u> <u>as</u> $\underline{\alpha}$ <u>approaches</u> <u>180°.</u>

15. (New Claim) A computer-implemented method for constructing and tangibly expressing a simple point-point curve comprising:

(i) selecting a start point, a_0 on a computer image display system of an implementing computer with a computer input device of the implementing computer;

(ii) selecting a peak point, p on a computer image display system of an implementing computer with a computer input device, where the peak point is a point on the curve that is farthest away from the chord between the start and end points a_0, a_1;

(iii) selecting an end point a_1 on a computer image display system of an implementing computer with a computer input device;

(iv) selecting a weight w for the curve with a computer input device of the implementing computer, whereupon the implementing computer, using any suitable mathematical formulae, constructs a simple point-point curve passing through the start point, a_0, the peak point, p, and the end point a_1, where, using the weight w, a point r is derived on a centerline extending from a center point, q, of a chord between the start and end points, a_0, a_1, and through the peak point, p, establishing an intersection of rays extending through the start and end points, a_0, a_1, setting start tangent and an end tangent directions, e_0, e_1; and

(iv) expressing tangibly the constructed point-point curve using any image display system controlled by the implementing computer.